REMARKS

These Amendments and Remarks respond to the final Office Action mailed March 31, 2011. Claims 1-3 and 5-20 were pending in the application. Claims 1 and 2 have been amended, claim 21 has been added and no claims have been canceled. No new matter is added by way of the claim amendments and new claims. Thus, claims 1-3 and 5-21 are pending for reconsideration.

Reissue of Office Action

Applicants would like to thank the Patent Office and Examiner Savage for granting Applicant's petition to reissue the Office Action in light of the earthquake and tsunami in Japan.

Summary of the Office Action

In the Office Action, claim 1 stands rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 6,464,867 to Morita *et al.* ("Morita"), and claims 2-3 and 5-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Morita in view of Japanese Patent No. 2002-210494 to Kazuki *et al.* ("Kazuki"). These rejections are traversed based upon the following remarks.

Response to rejections under 35 U.S.C. § 102(b)

Claim 1 has been amended to recite, *inter alia*, "a membrane degasser located in the downstream of the catalyst mixed tower." Support for this amendment can be found in original claim 2. No new matter is added.

In making the rejection of original claim 2, the Office acknowledges, "Morita et al disclose de-mineralizing equipment 22 located downstream of the catalyst mixed tower but *fail to specify a membrane degasser located in the downstream of the catalyst mixed tower.*" (Office Action, page, 3 lines 16-18). That is, the Office acknowledges that Morita does not teach "a membrane degasser located in the downstream of the catalyst mixed tower" as recited in amended claim 1. Therefore Morita does not anticipate amended claim 1. Accordingly,

Applicants respectfully request withdrawal of the rejection of claim 1 under 35 U.S.C. § 102(b).

Response to rejections under 35 U.S.C. § 103(a)

In the Office Action, claims 2-20 stand rejected as being unpatentable on the basis that it would be obvious to modify the invention disclosed in Morita to provide a degasser as suggested by Kazuki in order to remove gases evolved by the ultraviolet radiation and catalyst units. Applicants respectfully traverse these rejections.

Claim 2 has been amended to recite, *inter alia*, "a demineralization equipment is located in the downstream of the membrane degasser." Support for this amendment can be found in paragraphs [0024], [0032], [0037], [0047], [0048] and Fig. 1.

As discussed above, the Office acknowledges, "Morita et al disclose de-mineralizing equipment 22 located downstream of the catalyst mixed tower but fail to specify a membrane degasser located in the downstream of the catalyst mixed tower." (Office Action, page, 3 lines 16-18). To remedy this deficiency, the Office cites to Kazuki - "Kazuki et al disclose an analogous system that includes a degasser 15 located downstream of a catalyst unit 14 and teaches that such an arrangement removes gases produced by the UV radiation unit and catalyst unit." (*Id.* at lines 18-21).

However, in the embodiment of Kazuki cited by the Office, Kazuki discloses a catalyst unit 14 that includes a palladium catalyst. The palladium catalyst may be supported by a carrier, such as an anion exchange resin. However, the catalyst unit does not include anion exchange resins in addition to the anion exchange resin support. The embodiment further includes a degasser 15 located downstream of the catalyst unit 14 and an anion exchange resin device 16 located downstream of the degasser 15 as an essential requirement. (Kazuki, Figure 1 and paragraphs [0016]-[0018])

Kazuki also discloses an embodiment having an UV radiation unit 13, an anion exchange unit 19 located downstream of the UV radiation unit 13, a degasser 15 located downstream of the anion exchange unit 19 and an anion exchange resin device 16 located downstream of the degasser 15 as Comparative example 1 in Figure 2. Kazuki discloses that the apparatus of Comparative example 1 can decrease H_2O_2 and DO. That is, H_2O_2 produced in the UV radiation unit 13 is decomposed and removed by flowing the processed water through the anion exchange unit 19 followed by degasification of the water with degasser 15. However, Kazuki teaches that the comparative embodiment of Figure 2 fails to sufficiently decrease the TOC (organic state oxygen) of the ultra pure water obtained. (See paragraph [0039]).

Further, in paragraph [0040], Kazuki expressly teaches that the embodiment of Figure 1 provides water provides ultra pure water with sufficiently low concentrations of H_2O_2, dissolved oxygen (DO) and TOC. That is, Kazuki teaches it is unnecessary to provide an additional anion exchange unit 19. Therefore, one of ordinary skill reading Kazuki would not have combined the catalyst unit 14 (comprising only a catalyst) and the anion exchange unit 19 upstream of the degasser 15 in Kazuki. Thus, one of ordinary skill reading Kazuki, would not have found a benefit locating the degasser 15 of Kazuki downstream of the catalyst mixed tower of Morita.

In contrast, Applicants have discovered that the apparatus of Claim 1 of the present application can provide that "organic compounds are decomposed with an ultraviolet oxidation equipment, and the organic compounds included in primary pure water that is liquid to be processed is removed. Decomposition products such as carbon dioxide generated by oxidative degradation of organic compounds are absorbed and removed in the catalyst mixed tower located in the downstream of the organic-compounds oxidation equipment by anion exchange resins held within the tower. Therefore, an ultrapure water production plant according to this

invention can produce highly purified ultrapure water even if the load caused by negative ion ingredients is high." (See paragraph [0029]) Further, "Hydrogen peroxide etc., which is included in the oxidized water, is decomposed, generates oxygen and simultaneously decomposes anion exchange resins. In the present invention, because catalyst supports are filled up with anion exchange resins in a catalyst mixed tower where oxidized water including hydrogen peroxide etc. is introduced, hydrogen peroxide etc. is decomposed by reacting preferentially with a catalyst carried in the support and the anion exchange resins are inhibited from being decomposed." (See paragraph [0030]). Additionally, "decomposition of hydrogen peroxide etc., which is included in the oxidized water, is promoted, because catalyst supports are held in a catalyst mixed tower. Consequently, very few substances such as hydrogen peroxide remain in the catalyst mixed tower outflow water. Therefore, according to the present invention, hydrogen peroxide etc. may be prevented from remaining in the liquid that has passed through the membrane degasser provided in the downstream of the catalyst mixed tower. Hydrogen peroxide etc. is also prevented from being decomposed and generating oxygen in the downstream of the membrane degasser and a rise in the concentration of dissolved oxygen may be prevented." (See paragraph [0031]).

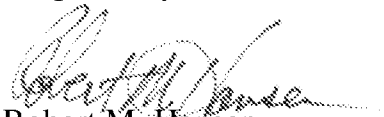
For these reasons Applicants respectfully submit that Claim 1 and the claims depending from Claim 1are not obvious in view of the combination of Morita with Kazuki.

Accordingly, Applicants respectfully request withdrawal of the rejections of claims 2-3 and 5-20 under 35 U.S.C. §103(a).

CONCLUSION

In view of the foregoing remarks, Applicants respectfully submit that the present application is now in condition for allowance, and request that a notice of allowance be forthcoming. The Examiner is invited to contact the undersigned for any reason related to this case.

Respectfully submitted,



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